

Art Unit: 3679

Ed

1-6 (Cancelled)

7. A method of providing pulsewidth modulated bitline and wordline signals for performing spatial to frequency transforms of analog signals from sensor elements of a CMOS sensor array, said transform being characterized by a basis function, comprising the steps of:

dividing a wordline period into intervals, such that each interval has an accumulated pulsewidth corresponding to a coefficient of said basis function, thereby providing a pulsewidth modulated wordline signal; and

dividing a bitline period into said intervals and into subintervals, such that each subinterval of each interval has an accumulated pulsewidth corresponding to a coefficient of said basis function.

8. The method of Claim 7, wherein said transform is a discrete cosine transform.

9. The method of Claim 7, wherein said transform is a discrete articulated trapezoid transform.

10-16 (Cancelled)

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Art Unit: 3679

17. The method of Claim 8, wherein:

said step of dividing the wordline period into intervals includes dividing a wordline period T into eight intervals of duration $T_{cos}(n \times 11.25)$, where n is an integer 0, 1, 2, 3, 4, 5, 6 or 7.

18. The method of Claim 7, wherein:

said step of dividing the wordline period into intervals includes dividing a wordline period T into intervals $t_0 = 0$, $t_1 = 0.19T$, $t_2 = 0.38T$, $t_3 = 0.55T$, $t_4 = 0.71T$, $t_5 = 0.83T$, $t_6 = 0.92T$ and $t_7 = T$.

19. The method of Claim 18, wherein:

said step of dividing a bitline period into said intervals and into subintervals includes

dividing an interval $t_1 - t_0$ into subintervals $t_{11} = 0.19(t_1 - t_0)$, $t_{12} = 0.38(t_1 - t_0)$, $t_{13} = 0.55(t_1 - t_0)$, $t_{14} = 0.71(t_1 - t_0)$, $t_{15} = 0.83(t_1 - t_0)$, $t_{16} = 0.92(t_1 - t_0)$ and $t_{17} = (t_1 - t_0)$,

dividing an interval $t_2 - t_1$ into subintervals $t_{21} = 0.19(t_2 - t_1)$, $t_{22} = 0.38(t_2 - t_1)$, $t_{23} = 0.55(t_2 - t_1)$, $t_{24} = 0.71(t_2 - t_1)$, $t_{25} = 0.83(t_2 - t_1)$, $t_{26} = 0.92(t_2 - t_1)$ and $t_{27} = (t_2 - t_1)$,

dividing an interval $t_3 - t_2$ into subintervals $t_{31} = 0.19(t_3 - t_2)$, $t_{32} = 0.38(t_3 - t_2)$, $t_{33} = 0.55(t_3 - t_2)$, $t_{34} = 0.71(t_3 - t_2)$, $t_{35} = 0.83(t_3 - t_2)$, $t_{36} = 0.92(t_3 - t_2)$ and $t_{37} = (t_3 - t_2)$,

dividing an interval $t_4 - t_3$ into subintervals $t_{41} = 0.19(t_4 - t_3)$, $t_{42} = 0.38(t_4 - t_3)$, $t_{43} = 0.55(t_4 - t_3)$, $t_{44} = 0.71(t_4 - t_3)$, $t_{45} = 0.83(t_4 - t_3)$, $t_{46} = 0.92(t_4 - t_3)$ and $t_{47} = (t_4 - t_3)$,

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Art Unit: 3679

dividing an interval $t_5 - t_4$ into subintervals
 $t_{51} = 0.19(t_5 - t_4)$, $t_{52} = 0.38(t_5 - t_4)$, $t_{53} = 0.55(t_5 - t_4)$,
 $t_{54} = 0.71(t_5 - t_4)$, $t_{55} = 0.83(t_5 - t_4)$, $t_{56} = 0.92(t_5 - t_4)$ and
 $t_{57} = (t_5 - t_4)$,

dividing an interval $t_6 - t_5$ into subintervals
 $t_{61} = 0.19(t_6 - t_5)$, $t_{62} = 0.38(t_6 - t_5)$, $t_{63} = 0.55(t_6 - t_5)$,
 $t_{64} = 0.71(t_6 - t_5)$, $t_{65} = 0.83(t_6 - t_5)$, $t_{66} = 0.92(t_6 - t_5)$ and
 $t_{67} = (t_6 - t_5)$,

dividing an interval $t_7 - t_6$ into subintervals
 $t_{71} = 0.19(t_7 - t_6)$, $t_{72} = 0.38(t_7 - t_6)$, $t_{73} = 0.55(t_7 - t_6)$,
 $t_{74} = 0.71(t_7 - t_6)$, $t_{75} = 0.83(t_7 - t_6)$, $t_{76} = 0.92(t_7 - t_6)$ and
 $t_{77} = (t_7 - t_6)$.

20. The method of Claim 9, wherein:

said step of dividing the wordline period into intervals
includes dividing a wordline period $10T$ into intervals $t_0 = 0$,
 $t_1 = 2T$, $t_2 = 4T$, $t_3 = 6T$, $t_4 = 7T$, $t_5 = 8T$, $t_6 = 9T$ and $t_7 = 10T$.

REMARKS

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